REMARKS

The Office Action mailed January 5, 2005 has been reviewed and carefully considered. Before entry of the present Amendment, Claims 1-16 were pending, with Claims 1 and 8 being independent claims. In the present amendment, Claims 1 and 8 are being canceled without prejudice, Claims 2-7 and 9-16 are being amended, and Claims 17-19 are being added. After entry of the present Amendment, Claims 2-7 and 9-19 will be pending, with Claims 17 and 18 being in independent form. Reconsideration of the Final Rejection is respectfully requested, at least on the basis of the foregoing amendments and the following remarks.

Support for newly added Claims 17-18 may be found at least in originally filed Claims 1 and 8, as well as at page 2, lines 17-20, page 6, line 16, to page 7, line 11, and page 8, line 18, to page 9, line 2; and support for newly added Claim 19 may be found at least at page 11, lines 3-5, of the originally filed specification.

In ¶4 of the Final Rejection, Claims 4-7 and 11-16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner commented that the phrase "the highest horizontal frequency" in line 4 of Claim 4 lacked antecedent basis. It should be noted that the purpose of "antecedent basis" under 35 U.S.C. §112, second paragraph, is to ensure that the language of the patent is clear, i.e., not indefinite, not to ensure that the first appearance of any object or concept in a claim be accompanied by an indefinite pronoun. As stated in the MPEP, in §2173.05(e) Lack of Antecedent Basis:

> ... Obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. *Ex parte Porter*, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Inter. 1992) ("controlled stream of fluid" provided reasonable antecedent basis for "the controlled fluid"). Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation "the outer surface of said sphere" would not require an antecedent recitation that the sphere has an outer surface. See *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359, 61 USPQ2d 1216, 1218-19 (Fed. Cir 2001) (holding that recitation of "an ellipse" provided antecedent basis for "an ellipse having a major diameter" because "[t]here can be no dispute that mathematically an inherent characteristic of an ellipse is a major diameter").

Similarly to the example above of "***the*** outer surface of said sphere" not requiring antecedent basis, the present claims recitation of "the highest horizontal frequency", "the lowest horizontal frequency", etc. does not require antecedent basis because such features are inherent in an array of DCT coefficients. As known to one of skill in the art, transforms such as the DCT or the FFT (Fast Fourier Transform) transform a signal from one domain to another, usually from the spatial domain to the frequency domain. In the newly added independent Claims 17 and 18, a macroblock (MB) of (spatial domain) pixels undergoes the Discrete Cosine Transform thereby yielding a set of DCT coefficients, where each coefficient value corresponds to a combination of horizontal and vertical frequencies. As would be known to one skilled in the relevant art, such a set of coefficients would include a coefficient which represents "the highest horizontal frequency in the MB regardless of vertical frequency" as is recited in amended Claims 4 and 11, a coefficient which represents "the highest vertical frequency in the MB regardless of horizontal frequency" as is recited in Claims 5 and 12, and a coefficient that represents "the highest horizontal frequency and the highest vertical frequency in the MB" as is recited in Claims 6 and 13.

In ¶6 of the Final Rejection, Claims 1-16 were rejected under 35 U.S.C. § 102(b) as anticipated by Eri Murata et al., "Fast 2D IDCT Implementation with multimedia instructions for a software MPEG2 decoder" ("Murata"). Specifically, the Examiner cites the passage in Murata which describes how one of four different algorithms is chosen for decoding a block of DCT coefficients "according to the address of the end of the block (EOB) code and the number of nonzero coefficients" (p. 3106, right column, lines 3-4). The four algorithms used are IDCT_DC, IDCT_AC, IDCT_4x4, and "normal IDCT otherwise" (p.3106, right column, lines 6-11). In other words, depending on the EOB code and the number of nonzero coefficients in a received block, the method of Murata selects one of four different types of IDCT decoding algorithms. None of these IDCT algorithms select a sub-array within the received coefficient array on which to perform IDCT coding.

By contrast, the invention claimed in newly added independent Claims 17 and 18 determines the horizontal and/or vertical complexity of the macroblock of pixels corresponding to the received array of DCT coefficients by determining the value of a predetermined coefficient in

the received array of DCT coefficients. After this, a sub-array within the DCT coefficient array is IDCT coding in order to reconstruct the original macroblock of pixels, where the size and position (within the DCT coefficient array) is selected based on the determined value of the predetermined coefficient. The invention claimed in Claims 17 and 18 is not limited to any particular type of IDCT coding (i.e., any of the IDCT coding methods described in Murata could be used), and does not select a type of IDCT coding, as Murata does. The claimed invention rather selects the size and position of the sub-array to be decoded.

Murata neither teaches nor suggests determining the horizontal and/or vertical complexity of the original macroblock of pixels by determining the value of a particular predetermined coefficient. Murata neither teaches nor suggests having the size and/or position of a subset (or sub-array)[Y] within the received DCT coefficient array which will be IDCT coded being selected by determining the value of a particular predetermined coefficient. In fact, Murata neither teaches nor suggests determining the individual value of any particular DCT coefficient as part of the decoding system or method. Because Murata neither teaches nor suggests the limitations recited in newly added Claims 17 and 18, Murata does not anticipate Claims 17 and 18. Withdrawal of the rejection (for all pending claims) is respectfully requested.

In ¶7 of the Final Rejection, Claims 1-16 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,167,092 ("Lengwehasatit"). Similar to Murata, Lengwehasit selects from a set of IDCT algorithms ("pruned IDCT algorithms") to apply to the DCT coefficient array. Lengwehasit finds the last nonzero coefficient in the DCT coefficient array (or string) and uses the location of that last nonzero coefficient within the array (string) to select the particular pruned IDCT algorithm to use.

First, it should be noted that Lengwehasit requires that the **entire** array (string) be scanned to determine the location of the last non-zero coefficient. Second, Lengwehasit uses the **location** of the last nonzero coefficient to determine which pruned IDCT algorithm to use. By contrast, By

[Y] It should be noted that the "arrays" discussed here and in the claims are a convenient and commonly used abstraction, i.e., the data may be received as a long string of data, and the receiving software and/or hardware may, or may not, refer to that string as an array in memory. Of course, the array construction makes the relationship between the coefficients more intuitively evident in regards to horizontal and vertical frequency.

contrast, the invention claimed in newly added Claims 17 and 18 only determines the **value** of a **single** predetermined coefficient to select the size and position of the sub-array to be IDCT coded. In other words, Claims 17 and 18 do not require the entire array to be scanned. Furthermore, the location of the coefficient whose value will be read in Claims 17 and 18 is predetermined, i.e., fixed--for example, in one embodiment, it will always be the value of the coefficient at location 56 that is determined. By contrast, the method of Lengwehasit must find the location of the last nonzero coefficient within the array (string), and, once found, Lengwehasit does not determine the value of that found last nonzero coefficient.

Lengwehasit neither teaches nor suggests determining the horizontal and/or vertical complexity of the original macroblock of pixels by determining the **value** of a particular predetermined coefficient. Lengwehasit neither teaches nor suggests having the size and/or position of a subset (or sub-array) within the received DCT coefficient array which will be IDCT coded being selected by determining the value of a particular predetermined coefficient. In fact, Lengwehasit neither teaches nor suggests determining the individual value of any particular DCT coefficient as part of the decoding system or method. Because Lengwehasit neither teaches nor suggests the limitations recited in newly added Claims 17 and 18, Lengwehasit does not anticipate Claims 17 and 18. Withdrawal of the rejection (for all pending claims) is respectfully requested.

Based at least on the foregoing, the allowance of all presently pending claims is respectfully requested.

Respectfully submitted,

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